REMARKS

Claims 1-38 were pending in this application when the present Office Action was mailed. Claim 9, 19, 29, 30 and 36-38 have been cancelled. Claims 1-8, 10-18, 20-28 and 31-35 have been amended, generally to clarify aspects of these claims without narrowing the scope of the claims. Claims 39-46 have been added. Accordingly, claims 1-8, 10-18, 20-28, 31-35 and 39-46 are currently pending.

In the Office Action mailed June 16, 2003, the specification was objected to and the pending claims were rejected. More specifically, the status of the application in light of this Office Action is as follows:

(A) The specification stands objected to as including informalities at pages 11 and 20;

(B) Claims 27, 28 and 30-36 stand rejected under 35 U.S.C. § 112, second paragraph;

(C) Claims 1-38 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,099,702 to Reid, et al. ("Reid");

(D) Claims 1-19, 37 and 38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,950,184 to Adams, et al. ("Adams");

(E) Claim 37 stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,416,647 to Dordi, et al. ("Dordi"); and

(F) Claims 1-5, 8, 10, 20, 22 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dordi.

The undersigned attorney wishes to thank the Examiner for engaging in a telephone conference on October 8, 2003. The following remarks summarize and expand upon the points discussed during the October 8 telephone conference.

A. Response to the Objections to the Specification

This specification has been amended to correct the informalities identified by the Examiner at pages 11 and 20. Accordingly, the objection to the specification should be withdrawn.

B. Response to the Section 112 Objections

Claims 27 and 28 have been amended as suggested by the Examiner. Accordingly, the Section 112 rejections of these claims should be withdrawn. Dependent claims 30 and 36 have been cancelled and accordingly the Section 112 rejection of these claims is now moot. Dependent claims 31-35 have been amended to depend from new claim 39 and accordingly, the Section 112 rejections of these claims is now moot.

C. Response to the Section 102 Rejection of Claims 1-38 Based on Reid

Claim 1 is directed to an apparatus for processing a microelectronic workpiece and includes, *inter alia*, a workpiece support configured to hold the workpiece, a processing container configured to receive the workpiece, and a drive mechanism connected to drive the processing container and/or the support so that the workpiece may be moved to a plurality of processing positions. A first chemical delivery system provides a processing fluid to the workpiece at a first processing position and a second chemical delivery system provides a spray of processing fluid at a second processing position.

A control system is operatively coupled to the drive mechanism and is configured to direct the drive mechanism to move the workpiece support during application of the spray so as to vary the radial position of the initial contact between the spray and the microelectronic workpiece. Accordingly, the control system allows the spray to scan across the workpiece as the workpiece moves relative to the spray. This arrangement can effectively provide the spray over the entire surface of the workpiece with a reduced amount of processing fluid. The reduced amount of

reduce the cost for processing the workpiece and can reduce the likelihood for contaminating one type of processing fluid with another.

Reid discloses an apparatus having multiple fluid collection systems and a nozzle 160 that directs the spray of fluid toward a wafer W. When the wafer W is in position 2 (as shown in Figure 1), rinse fluid is collected in a reclaim channel 130, and when the wafer W is elevated to position 3, rinse fluid is collected in a waste channel 140.

Although Reid further discloses a controller 198 that controls the motion of a wafer holder 190, Reid fails to disclose or suggest a controller that is "configured to direct the drive mechanism to move the workpiece support during application of the spray from the second chemical delivery system so as to vary the radial position of the initial contact between the spray and the microelectronic workpiece," as recited in claim 1. Reid must include such a feature to support a rejection under 35 U.S.C. § 102, which requires that each and every feature of the claimed invention be found in a single prior reference (see MPEP at Section 2131). In the context of a programmable computer or other controller, the Federal Circuit has held that programming creates a new machine once it is programmed to perform particular functions pursuant to instructions from program software (See *In re Alappat*, 33 F.3d 1526, 1556 (Fed. Cir. 1994)). Furthermore, the mere fact that references can be combined or modified does not render the resulting combination obvious unless the prior art also suggests the desirability of the combination (MPEP at Section 2143.01). In the context of claim 1, Reid fails to disclose or suggest providing a controller that directs the motion of a workpiece support in the manner specified by claim 1. Reid furthermore fails to provide any motivation for modifying his controller to provide this functionality. Accordingly, the Section 102 rejection of claim 1 on the basis of Reid should be withdrawn.

Claims 2-8 and 10 depend from claim 1. Accordingly, the Section 102 rejections of these claims on the basis of Reid should be withdrawn for the reasons described above and for the additional features of these dependent claims. Furthermore, several if not all of these claims include additional features not disclosed or suggested by Reid.

For example, claim 8 includes a second chemical delivery system configured to direct a spray of processing fluid "that initially impinges on less than an entire radius of the microelectronic workpiece." Reid specifically teaches away from this feature by reciting at column 4, lines 13-16 "using a nozzle that covers the full radius of the wafer W" to prevent "unwanted chemical reactions (e.g., corrosion and galvanic reactions)."

Independent claims 11 and 20 include features generally similar to those described above with reference to claim 1 and accordingly, the Section 102 rejections of these claims should be withdrawn for the reasons discussed above and for the additional features of these claims. Claims 12-18 depend from claim 11 and claims 21-28 depend from claim 20. Accordingly, the Section 102 rejections of these claims on the basis of Reid should be withdrawn for the reasons discussed above and for the additional features of these claims.

Claims 19, 29, 30 and 36-38 have been cancelled and accordingly the Section 102 rejections of these claims is now moot. Claims 31-35 have been amended to depend from claim 39 which, as discussed in greater detail below, includes features identified by the Examiner as being patentable over the applied references.

D. Response to the Section 102 Rejections Based on Adams

Claims 1-19, 37 and 38 were rejected under 35 U.S.C. § 102b as being anticipated by Adams. Claims 37 and 38 have been cancelled and accordingly the rejections of these claims is now moot.

Adams discloses a system for applying fluid directly downwardly on a wafer 12 through conduits 92 and 90. Accordingly, even if Adams disclosed a controller configured to move the wafer axially while the fluid was applied to the wafer (which Adams does not), such a movement would fail to "vary the radial position of the initial contact between the spray and the microelectronic workpiece," as recited in claim 1. Therefore, Adams fails to cure the deficiencies described above with reference to Reid and completely fails to provide the requisite motivation for modifying his device to arrive at the features of claim 1. For at least the same reasons, Adams fails to support a

Section 102 rejection of claim 11. Therefore, the Section 102 rejections of claims 1 and 11 on the basis of Adams should be withdrawn.

Claims 2-8 and 10 depend from claim 1 and claims 12-18 depend from claim 11. Accordingly, the Section 102 rejections of these claims should be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

E. Response to the Section 102 Rejection on the Basis of Dordi

Claim 37 was rejected under 37 U.S.C. § 102(e) as being anticipated by Dordi. Claim 37 has been cancelled and accordingly, the Section 102 rejection of claim 37 is now moot.

F. Response to the Section 103 Rejections on the Basis of Dordi

Claims 1-5, 8, 10, 20, 22 and 24 were rejected under 35 U.S.C. § 103 as being unpatentable over Dordi. Dordi discloses an arrangement for face-up processing of a semiconductor substrate and further discloses applying a spray of rinse agent after completing an electrochemical deposition process. However, Dordi fails to disclose or suggest a control system that is operatively coupled to a drive mechanism to "vary the radial position of the initial contact between the spray and the microelectronic workpiece." Accordingly, Dordi fails to support a rejection of claims 1 and 20 under Section 103 and the Section 103 rejection of these claims should be withdrawn. Claims 4, 5, 8 and 10 depend from claim 1, and claims 22 and 24 depend from claim 20. The Section 103 rejection of these claims should accordingly be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

G. New Claims 39-46 Are Patentable Over the Applied References

New claim 39 is directed to an apparatus for processing a microelectronic workpiece that includes a workpiece support, a processing vessel configured to receive a microelectronic workpiece held by the support, and a drive system coupled to the support to move the support along a first axis relative to the processing vessel between a first position and a second position. The drive system is further configured to tilt the workpiece support relative to the vessel about a second axis generally transverse to

the first axis. As indicated by the Examiner in the October 8 telephone conference, such a limitation is not disclosed or suggested by Reid. The remaining references applied by the Examiner similarly fail to disclose or suggest such a limitation. Accordingly, claim 39 is patentable over the applied references. New claims 40-42 depend from claim 39 and are accordingly patentable over the applied references for the reasons discussed above and for the additional features of these dependent claims. Furthermore, amended claims 31-34 now depend from claim 39 and are accordingly patentable over the applied references for the reasons discussed above and for the additional features of these dependent claims.

New claim 43 is directed to an apparatus for processing a microelectronic workpiece that includes a workpiece support having an electrical contact positioned to contact a microelectronic workpiece. The apparatus further includes a processing vessel configured to receive the workpiece held by the support, and a drive system coupled to the support to move the support along an axis relative to the processing vessel. A fluid delivery system is positioned to direct at least one stream of processing fluid toward the workpiece support to impinge on the electrical contact when the workpiece support does not hold a workpiece. Accordingly, the fluid delivery system can rinse the contact to prevent potentially undesirable chemical buildups, for example, as described in the specification at pages 19 and 20. The applied references fail to disclose or suggest such a feature and accordingly, claim 43 is patentable over these references. Claims 44-46, which depend from claim 43, are patentable for the reasons described above and for the additional features of these dependent claims.

H. Conclusion

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. § 112 and patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-3258.

Respectfully submitted,
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